Adolescents’ negative attitudes towards non-drinkers: A novel predictor of risky drinking

Daniel Regan¹ and Todd G Morrison²

Abstract
The Regan Attitudes towards Non-Drinkers Scale was developed to address the concept that consumption of alcohol may serve as a means of avoiding social costs associated with being a non-drinker. This study sought to examine the Regan Attitudes towards Non-Drinkers Scale within a sample of Irish school-age adolescents. Results indicated that the Regan Attitudes towards Non-Drinkers Scale was a statistically significant predictor of self-reported problematic drinking. The findings of this study underscore the importance of this newly identified construct and highlight the necessity of further empirical tests of the Regan Attitudes towards Non-Drinkers Scale.

Keywords
adolescent drinking, attitudes towards non-drinkers, problem drinking, psychometrics

Introduction
Adolescent drinking is one of the primary public health concerns in the United States (Ellickson et al., 2003). Figures from US research suggest that approximately 30 per cent of adolescents’ first experiences with alcohol occur before the age of 13, and that by the time they finish the eighth grade, between 41 per cent and 52 per cent of adolescents have tried alcohol, with 20 per cent having drunk to intoxication (Grunbaum et al., 2004; Johnston et al., 2000, 2006). While rates of lifetime consumption (i.e. ever tried alcohol) are similar, excessive consumption among Irish adolescents appears to be even more common than in the United States. In the 2006 Health Behaviours of School-Aged Children (HBSC) study, 75 per cent of those aged 15–17 years reported having previously consumed alcohol, and 56 per cent reported previous drunkenness (Gavin et al., 2008). Similar findings have been noted in other studies focusing on European adolescents (Hibell et al., 2004), with the 2007 European School Project on Alcohol and other Drugs (ESPAD) study indicating that 54 per cent of Irish respondents (ages 15–16) had been intoxicated during their lifetime (Hibell et al., 2009).

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The sequelae of excessive alcohol consumption include injury and death due to accidents and suicide as well as depression, learning and memory deficits, unplanned pregnancy and sexually transmitted infections (Bonnie and O’Connell, 2003; Ellickson et al., 2003; Englund et al., 2008; Mongan et al., 2007). Given that longitudinal research suggests initiation of alcohol use typically occurs in adolescence, and early-onset drinking is associated, among males and females, with later adolescent and adult alcohol consumption and alcohol-related problems (Ellickson et al., 2003; Englund et al., 2008; Huurre et al., 2010; Maggs et al., 2008), identification of reasons influencing the initiation and maintenance of, and/or increase in, adolescent drinking is critical.

Factors influencing alcohol consumption among adolescents include alcohol use by peers and peer attitudes regarding alcohol (Preston and Goodfellow, 2006; White et al., 1990), sensation seeking (Hittner and Swickert, 2006) and the belief that alcohol consumption will result in positive outcomes (Anderson and Baumberg, 2006; Zamboanga et al., 2006). Gender is another area of interest, with young males tending to drink more frequently, in greater quantity, and experiencing more alcohol-related problems (e.g. driving while intoxicated; Anderson and Baumberg, 2006; Comello and Slater, 2011) than young females. This gender difference may be attributable, in part, to masculine capital being accrued, whereby masculine identity is created, using competence in one masculine domain to compensate for a lack of competence in other masculine domains; thus, drinking (perceived as orthodox masculine behaviour) may confer credit upon the drinker (De Visser et al., 2009). Motivational models also have been used to examine drinking behaviour (Cooper, 1994; Cox and Klinger, 1988; Engels et al., 2005), with one of the most comprehensive being the four-factor model (Cooper, 1994; Cox and Klinger, 1988), which emphasises drinking motivations across social, coping and enhancement domains, in addition to drinking for conformity motives. The belief that adolescents drink to avoid rejection by a valued group is ‘widely held in both lay and professional circles, and is strongly supported by a wealth of indirect evidence’ (Cooper, 1994: 118). The salience of norms about peers’ drinking and conformity to those norms are well established, particularly when modelled by high-status (i.e. popular) peers (Teunissen et al., 2012), which can contribute to an imbalance in what is considered acceptable (i.e. high levels of excessive consumption tolerated; MacNeela and Bredin, 2011). Yet the related concept that adolescents consume alcohol to avoid the social costs associated with being a non-drinker has received little attention.

Social Identity Theory (SIT; Tajfel, 1982) provides a useful framework for understanding how being perceived as a non-drinker may contribute to alcohol consumption. This theory posits that an individual’s self-concept is based, in part, on positive evaluations of salient in-groups and less positive evaluations of designated out-groups. Due to being incongruent with the normative behaviour of drinking, and constructs frequently assessed as correlates of drinking behaviour (e.g. sensation seeking–related drinking, peer pressure–related drinking, drinking for enhancement motives; Cooper, 1994; Hoyle et al., 2002), the act of not consuming alcohol may be viewed as behaviour characteristic of an out-group and, hence, avoided. To investigate this idea, the Regan Attitudes towards Non-Drinkers Scale (RANDS: Regan and Morrison, 2011) was developed. Initial findings suggest that the RANDS demonstrates good scale-score reliability and convergent validity (i.e. RANDS scores correlate significantly with yearly alcohol consumption (YAC) and frequency of binge-drinking occasions over the previous 12 months). Exploratory and confirmatory factor analyses provided evidence for a single factor, which was labelled, ‘not drinking as a social cost’. Furthermore, squared semi-partial correlations revealed that the RANDS accounted for more unique variance in university samples’ drinking behaviour than variables commonly
measured by researchers such as peer pressure and sensation seeking.

To date, the RANDS has been distributed to college and older-age populations. Males tend to score higher than females on the RANDS, and the association between their scores on the RANDS and indices of problem drinking tends to be stronger. However, the suggestion that adult drinking can be predicted by early-onset drinking (Ellickson et al., 2003) underscores the need to administer the RANDS to younger participants. Despite the prevalence of alcohol consumption among adolescents within the Republic of Ireland (Hibell et al., 2009), scant attention has been paid to this group with regard to psychosocial factors influencing their alcohol consumption. The aim of this study was to address this gap by investigating the association between attitudes towards non-drinkers and Irish adolescents’ drinking behaviour.

To examine the reliability and validity of the RANDS within this new population, several hypotheses were tested. First, it was hypothesised that the single-factor structure of the RANDS would be replicated when the measure was distributed to adolescents (Hypothesis 1). Second, it was predicted that self-reported drinkers would score significantly higher on the RANDS than non-drinkers (Hypothesis 2). The third hypothesis (Hypothesis 3) was that among self-reported drinkers, scores on the RANDS would be positively associated with two characterological predictors of alcohol consumption (i.e. motives to drink and sensation seeking). The rationale for these hypotheses is articulated below.

Sensation seeking is a biosocial dimension of personality characterised by the need for varied, novel and complex sensations and experiences and the willingness to take physical and social risks for the sake of such experiences (Zuckerman, 1994). As a potent predictor of alcohol use, it was posited that participants obtaining higher scores on a measure of sensation seeking may view non-drinkers (i.e. those not sharing a need for alcohol-related novel experiences) in a negative light.

Similarly, individuals’ motives to drink are considered a proximal and diagnostic indicator of drinking behaviour (Cooper, 1994) and described as a ‘final, common pathway to drinking’ (Cox and Klinger, 1988: 168). It was predicted that those endorsing social, enhancement, coping or conformity motives to drink may perceive non-drinkers (i.e. individuals not sharing these motives) negatively. It was finally hypothesised that scores on the RANDS would be positively associated with all the drinking indices (e.g. monthly alcohol consumption (MAC), YAC and risky drinking behaviour (i.e. binge drinking): Hypothesis 4).

**Method**

**Participants**

Four secondary schools agreed to participate and to distribute the survey to all the available students in the final 2 years of their schooling. Ten questionnaires were discarded as participants had not completed any portion of the survey. The full sample was 217 females (50.5%) and 213 males (49.5%), attending mixed-sex \((n = 245)\), all-female \((n = 112)\) or all-male \((n = 73)\) schools \((N = 430)\). Respondents were between the ages of 14 and 19 \((M = 16.62, \text{ standard deviation (SD)} = .75)\), and most were Irish nationals \((n = 387)\) residing in a rural \((n = 279)\) location. No additional demographic information was collected.

**Measures**

**Alcohol quantity/frequency (QF; e.g. Ramstedt and Hope, 2005).** Participants were asked two questions about prior/current drinking behaviour: (1) frequency (‘How many times during the last 12 months/30 days have you been drinking beer or wine/cider/spirits?’) and (2) quantity (‘When you drink beer or cider/wine/spirits, approximately how many bottles/glasses/single measures and so on do you drink?’). Response options were ‘Daily’, ‘4–5 days a week’, ‘2–3 days a week’, ‘Once a week’, ‘2–3 days a month’,
‘Once a month’, ‘One or a couple of days a year’ and ‘Never’. The answers to the frequency and quantity questions were calculated into monthly and yearly totals (MAC and YAC). Levels of risky drinking (i.e. binge drinking) were assessed by two items: (1) On a single occasion, have you ever consumed alcoholic beverages corresponding to at least one bottle of wine, or seven single shots of spirits or six premixed spirit drinks or four pints of beer? (2) If yes, please state how often in the last 30 days/12 months you have consumed this amount. The response options for item 1 were ‘yes/no’ and the options for item 2 were the same as for MAC and YAC. These questions were used to compute binge-drinking occasions in the previous 30 days/12 months (monthly binge-drinking occasions (BDM)/yearly binge-drinking occasions (BDY)). In all, five alcohol measures were employed: (1) usual amount of standard drink consumption (USDC) (i.e. average number of drinks per day of drinking; Rehm et al., 2003), (2) MAC, (3) YAC, (4) BDM and (5) BDY.

QF indices are the most common measurement approach (Greenfield and Kerr, 2008), and their brevity and relative ease of completion make them suitable for this study. Furthermore, minimal differences have been found between self-report measures when the recall period is of sufficient duration (i.e. 12 months; Gmel and Rehm, 2004) as in this study. Additionally, research suggests that the alternative type of brief measure (the graduated frequency (GF)) is more complicated than the QF and overestimates actual alcohol consumption (Gmel et al., 2006; Graham et al., 2004; Poikolainen et al., 2002).

**Brief Sensation Seeking Scale (BSSS: Hoyle et al., 2002).** This eight-item measure (e.g. I like to do frightening things) uses a 5-point Likert-type scale (1 = strongly agree; 5 = strongly disagree). Total scores can range from 8 to 40, with higher scores denoting greater sensation seeking. Hoyle et al. (2002) provide evidence attesting to the psychometric soundness of the BSSS.

**Drinking Motives Questionnaire–Revised (Adolescent version) (DMQ-R; Cooper, 1994).** This 20-item scale measures motives to drink alcohol across four factors (i.e. social, coping, enhancement and conformity). It uses a 6-point Likert-type scale (1 = never; 6 = almost always). Total scores (within each subscale) can range from 5 to 30, with higher scores denoting stronger endorsement of positive reinforcement received through consumption of alcohol. MacLean and Lecci (2000) suggest that the DMQ-R is a valid tool for research with adolescents.

**RANDS (Regan and Morrison, 2011).** This 11-item scale examines attitudes towards non-drinkers (e.g. I would hate to be a non-drinker). It uses a 5-point Likert-type scale (1 = strongly disagree; 5 = strongly agree), with total scores ranging from 11 to 55 (higher scores denote more negative attitudes). Regan and Morrison offer several strands of evidence in support of the scale’s reliability and validity.

**Social Desirability Scale (SDS-17; Stöber, 2001).** This 16-item scale measures participants’ engagement in socially desirable responding (e.g. I always admit my mistakes openly and face the potential negative consequences). It uses a dichotomous response format (1 = true; 2 = false), with total scores ranging from 16 to 32. Higher scores indicate stronger social desirability bias. Stöber’s (2001) research suggests that the SDS-17 is psychometrically sound.

**Procedure**

Consent forms were sent to parents of students in their final two years at four secondary schools, which were situated in three of four provinces (Leinster, Munster and Connaught) within the Republic of Ireland. Previous research has suggested that in alcohol studies, school-age participants will downgrade their consumption if they believe their parents have involvement/knowledge of the research (Powell et al., 2006; Rossow et al., 2007). For 138
students, consent forms were posted directly to parents from the school. However, for the remaining 292 respondents, consent forms were distributed to the students to give to their parents. A window of 1–2 weeks was allowed for consent/non-consent response from parents, which is consistent with other research in this field (Leonard et al., 2001). After that deadline, survey packs were sent to each school.

Questionnaires were administered by teachers and completed within teaching hours. Printed directions on the front of each envelope and at the end of each questionnaire instructed the participant, when finished, to seal the completed questionnaire in a peel–seal envelope. No incentives were offered to respondents for their involvement in the study. All prospective respondents were informed that (1) their participation was strictly voluntary, (2) they could omit any items they wished without penalty or consequence and (3) no self-identifying information was being gathered (i.e. questionnaires were anonymous). Finally, respondents were informed that debriefing materials would be made available at the end of the semester. This protocol was approved by the Research Ethics Committee at the home institution of the senior author. Data were analysed using SPSS 17 (SPSS Inc., 2009).

**Results**

Means, SDs and Cronbach’s alpha coefficients are provided in Table 1. Scores were below the midpoint on the RANDS and coping and conformity motive scales; however, scores were above the midpoint for enhancement and social motives, social desirability and sensation seeking. Thus, participants reported, at least, moderate levels of drinking for enhancement and social motives, socially desirable responding and sensation seeking. Cronbach’s alpha coefficients on the RANDS and DMQ-R (all four subscales) were > .8, which is good (Carmines and Zeller, 1979). For the SDS-17 and BSSS, the alpha coefficients were adequate (between .6 and .7).

### Table 1. Means, SDs and alpha coefficients.

<table>
<thead>
<tr>
<th>Scales</th>
<th>M</th>
<th>SD</th>
<th>α</th>
<th>95% CI</th>
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<td>Age, years</td>
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<td>0.75</td>
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<td>RANDS</td>
<td>26.86</td>
<td>8.70</td>
<td>.87</td>
<td>.85–.89</td>
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<tr>
<td>DMQ_Ea</td>
<td>16.89</td>
<td>6.29</td>
<td>.87</td>
<td>.85–.89</td>
</tr>
<tr>
<td>DMQ_Sa</td>
<td>19.58</td>
<td>6.30</td>
<td>.89</td>
<td>.87–.91</td>
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<td>9.39</td>
<td>.85</td>
<td>.83–.87</td>
</tr>
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<td>4.37</td>
<td>.82</td>
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<tr>
<td>SDS</td>
<td>23.91</td>
<td>3.08</td>
<td>.68</td>
<td>.64–.72</td>
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<tr>
<td>BSSE</td>
<td>28.65</td>
<td>5.17</td>
<td>.69</td>
<td>.65–.73</td>
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<tr>
<td>USDC</td>
<td>9.50</td>
<td>5.30</td>
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<tr>
<td>MAC</td>
<td>30.67</td>
<td>53.83</td>
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<td>YAC</td>
<td>363.37</td>
<td>696.75</td>
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<tr>
<td>BDM</td>
<td>2.91</td>
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<tr>
<td>BDY</td>
<td>32.14</td>
<td>49.96</td>
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</table>

RANDS: Regan Attitudes towards Non-Drinkers Scale; DMQ_E/S/C1/C2: Drinking Motives Questionnaire (enhancement/social/coping/conformity subscales, respectively); SDS: Social Desirability Scale; BSSE: Brief Sensation Seeking Scale; USDC: usual amount of standard drink consumption; MAC/YAC: monthly alcohol consumption/yearly alcohol consumption; BDM/BDY: monthly binge-drinking occasions/yearly binge-drinking occasions.

*These subscales are only applicable to individuals who reported consuming alcohol (maximal, n = 366).

**Dimensionality of the RANDS**

Exploratory factor analysis (EFA) was conducted to assess whether the one-dimensional structure of the RANDS, previously identified and confirmed among university-age samples, was replicated with this younger sample. The dimensionality of the RANDS was investigated using maximum likelihood parameter estimation with oblique rotation (oblimin, delta set at zero). The Kaiser–Meyer–Olkin (KMO) measure of sampling adequacy and Bartlett’s test of sphericity were used to test whether the data were suitable for EFA. For the former, values closer to 1.0 are recommended, whereas for the latter, a statistically significant chi-squared value allows one to reject the hypothesis that the variables being factor analysed are unrelated to one another (Morrison and Morrison, 2006). The KMO statistic was .92 and Bartlett’s
test was \( p < .001 \); thus, the data were appropriate for EFA.

Parallel analysis was used for the purpose of factor retention (O’Connor, 2003 as cited in Morrison and Morrison, 2006). Stated briefly, this technique generates eigenvalues from random sets of data that possess the same parameters as the actual data set in terms of number of participants and number of scale items. The \( i \)th eigenvalue generated using the random data then is compared to the \( i \)th eigenvalue generated using the actual data. Factor retention is terminated ‘when a given eigenvalue for the random data becomes larger than its corresponding eigenvalue for the real data’ (Morrison and Morrison, 2006: 126).

Results of the parallel analysis supported Hypothesis 1 and suggested that a one-factor solution was appropriate (i.e. the first eigenvalue for the real data exceeded the first eigenvalue for the random data \((4.29 \text{ vs } 1.26)\), whereas the second eigenvalue did not \((0.92 \text{ vs } 1.19)\). Thus, the analysis was repeated forcing a one-factor solution, which accounted for 39.03 per cent of the variance.

An independent samples \( t \)-test was conducted to determine whether drinkers and non-drinkers differed in their scores on the RANDS. Congruent with the theoretical framework employed in this study (i.e. SIT) and supportive of Hypothesis 2, adolescents who reported consuming alcohol evidenced significantly more negative attitudes towards members of the out-group, namely, non-drinkers: \((\text{drinkers: } M = 28.00, \text{ SD } = 8.54 \text{ vs non-drinkers: } M = 20.36, \text{ SD } = 6.57), t (104.05) = 8.16, p < .01 \) and \( d = 1.00 \). For all the subsequent analyses, non-drinkers \((n = 64)\) were excluded leaving 366 (174 males, 192 females) participants.

Correlations were computed among the RANDS and the other variables (see Table 2). In accordance with Hypotheses 3 and 4, the RANDS correlated significantly with drinking motives (enhancement, coping, conformity and social), sensation seeking and all the drinking indicants (i.e. USDC, MAC, YAC, BDM and BDY) \((p < .01 \text{ level})\). The direction of these associations suggests that as respondents’ negative attitudes towards non-drinkers increase so do their general consumption of alcohol, risky drinking behaviour, motives to drink and sensation seeking. Scores on the RANDS and the SDS-17 correlated negatively; thus, those evidencing greater levels of social desirability bias also tended to report less negative attitudes towards non-drinkers.

To examine whether attitudes towards non-drinkers account for incremental variance in alcohol consumption, hierarchical multiple regression was used (see Table 3). For all regressions, the Durbin–Watson statistic approximated 2, suggesting that autocorrelations among residuals were not of concern, and maximal values for Cook’s distance were less than 1 suggesting the absence of outliers (Atkinson, 1994). To reduce the number of regressions that were conducted, the five indicants of drinking (i.e. USDC, MAC, YAC, BDM and BDY) were subjected to a principal components analysis (PCA). The KMO measure of sampling adequacy was .76 and Bartlett’s test of sphericity was statistically significant suggesting that the data were appropriate for PCA. A single component solution emerged (eigenvalue = 3.31; 66.23% of variance). Based on the direction of the loadings, this component was labelled ‘problem drinking’.

When conducting multiple regression analysis, problems can arise if two or more of the predictor variables are strongly intercorrelated. While the overall prediction is not affected, interpretation of the size of the regression coefficients, their standard errors or the associated \( t \)-tests may be misleading because of the potentially confounding effects of multicollinearity (Mason and Perreault Jr, 1991). Inspection of Table 2 reveals that multicollinearity was evident between the enhancement and social motives \((r = .80)\). Thus, one of the two motives (i.e. enhancement) was randomly chosen to be treated as a predictor variable.

Social desirability was entered in Step 1 to partial out response bias. In Step 2, three of the four motives (enhancement, coping, conformity)
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<td>2. Age</td>
<td>0.11*</td>
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<td>3. DMQ_E</td>
<td>-0.06</td>
<td>0.03</td>
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<td>0.08</td>
<td>0.63**</td>
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<td>5. DMQ_C2</td>
<td>-0.07</td>
<td>0.00</td>
<td>0.40**</td>
<td>0.50**</td>
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<td>6. DMQ_S</td>
<td>-0.07</td>
<td>0.10*</td>
<td>0.80**</td>
<td>0.57**</td>
<td>0.40**</td>
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<td>7. BSSS</td>
<td>-0.23**</td>
<td>-0.07</td>
<td>0.32**</td>
<td>0.18**</td>
<td>0.12*</td>
<td>0.30**</td>
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<td>8. SDS</td>
<td>0.15**</td>
<td>0.10</td>
<td>-0.27**</td>
<td>-0.18**</td>
<td>-0.15**</td>
<td>-0.24**</td>
<td>-0.22**</td>
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<td>9. USDC</td>
<td>-0.36**</td>
<td>0.03</td>
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<td>0.33**</td>
<td>0.17***</td>
<td>0.47**</td>
<td>0.36**</td>
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<td>10. MAC</td>
<td>-0.06</td>
<td>0.05</td>
<td>0.31**</td>
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<td>0.17**</td>
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<td>11. YAC</td>
<td>-0.06</td>
<td>0.04</td>
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<td>0.36**</td>
<td>0.15**</td>
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<td>0.05</td>
<td>0.09</td>
<td>0.29**</td>
<td>0.31**</td>
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<td>0.24**</td>
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<td>0.05</td>
<td>0.06</td>
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<td>-0.14*</td>
<td>0.59**</td>
<td>0.46**</td>
<td>0.40**</td>
<td>0.59**</td>
<td>0.33**</td>
<td>-0.31**</td>
<td>0.51**</td>
<td>0.39**</td>
<td>0.39**</td>
<td>0.34**</td>
<td>0.29**</td>
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<tr>
<td>15. Problem drinking</td>
<td>-0.04</td>
<td>0.05</td>
<td>0.36**</td>
<td>0.39**</td>
<td>0.16**</td>
<td>0.33**</td>
<td>0.33**</td>
<td>-0.16**</td>
<td>0.51**</td>
<td>0.94**</td>
<td>0.91**</td>
<td>0.82**</td>
<td>0.83**</td>
<td>0.43**</td>
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DMQ_E/C1/C2/S: Drinking Motives Questionnaire (enhancement/coping/conformity/social subscales, respectively); BSSS: Brief Sensation Seeking Scale; SDS: Social Desirability Scale; USDC: usual amount of standard drink consumption; YAC: yearly alcohol consumption; MAC: monthly alcohol consumption; BDM: monthly binge-drinking occasions; RANDS: Regan Attitudes towards Non-Drinkers Scale; Problem drinking: principal components analysis regression score (includes USDC, MAC, YAC, BDM and BDY).

*p < .05, **p < .01.
were entered; in Step 3, sensation seeking was entered; and in Step 4, attitude towards non-drinkers (the RANDS) was entered. Step 1 was statistically significant, $F(1, 281) = 7.03, p < .01$; that is, individuals obtaining higher scores on the SDS-17 ($t = −2.65, β = −.16, p < .01$) evidenced lower levels of problem drinking. Step 2 was also statistically significant, $F(4, 278) = 15.89, p < .01$, with only enhancement ($t = 2.66, β = .18, p < .01$) and coping motives ($t = 4.20, β = .30, p < .01$) emerging as significant predictors (i.e. participants drinking for social enhancement and coping motives evidenced greater levels of problem drinking). Step 3 was statistically significant, $F(5, 277) = 17.99, p < .01$, with coping motives ($t = 4.32, β = .29, p < .01$), sensation seeking ($t = 4.01, β = .22, p < .01$) and attitudes towards non-drinkers ($t = 4.27, β = .28, p < .01$) all emerged as significant predictors. For the final model, the direction of the standardised beta weights suggests that problem drinking was more likely to occur among those (1) using alcohol for coping purposes, (2) evidencing greater sensation seeking and (3) reporting more negative attitudes towards non-drinkers. Squared semi-partial correlations showed that the RANDS accounted for an equivalent amount of variance in the problem-drinking component as the coping motive and sensation seeking (all = .06).

**Discussion**

The RANDS was administered to a sample of Irish secondary-level school students to investigate

**Table 3. Hierarchical multiple regression analysis.**

<table>
<thead>
<tr>
<th></th>
<th>Adjusted $R^2$</th>
<th>$β^a$</th>
<th>SE$^a$</th>
<th>$β^b$</th>
<th>$t$</th>
<th>$p$</th>
<th>$F$</th>
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<tr>
<td>SDS-17</td>
<td>.02</td>
<td>-.051</td>
<td>.019</td>
<td>-.156</td>
<td>-2.65</td>
<td>.008</td>
<td>7.03**</td>
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<tr>
<td><strong>Step 2</strong></td>
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<tr>
<td>SDS-17</td>
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<td>.018</td>
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<td>-1.27</td>
<td>.277</td>
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<tr>
<td>DMQ-R_E</td>
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<td>.012</td>
<td>.182</td>
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<td>.008</td>
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<tr>
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<td>RANDS</td>
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<td>.277</td>
<td>4.27</td>
<td>.001</td>
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</table>

SE: standard error; DMQ-R_E/C1/C2: Drinking Motives Questionnaire–Revised (enhancement/coping/conformity subscales, respectively); BSSS: Brief Sensation Seeking Scale; SDS: Social Desirability Scale; RANDS: Regan Attitudes towards Non-Drinkers Scale.

**p < .01.**
a: Unstandardized coefficient.
b: Standardized coefficient.
whether attitudes towards non-drinkers accounted for variance in self-reported drinking behaviour. Results suggest that among this sample of adolescents, scores on the RANDS were positively associated with problematic drinking to a significant degree.

Consistent with previous research, the RANDS demonstrated good scale-score reliability ($\alpha = .87$). Findings also attest to the construct validity of this scale: scores on the RANDS correlated significantly with other predictors of drinking behaviour (i.e. motives to drink and sensation seeking) and with all indicants of alcohol consumption. Multiple regression analyses demonstrated that similar to findings among university students, scores on the RANDS were a strong predictor of a component entitled ‘problem drinking’; indeed, the squared semi-partial correlations indicated that the proportion of unique variance in ‘problem drinking’ accounted for by the RANDS was comparable to proportions obtained by variables frequently used within large-scale alcohol research studies (e.g. sensation seeking and motives to drink).

While age did not correlate significantly with ‘problem drinking’ and correlated weakly with scores on the RANDS, systematic examination of different age groups is advised. European and American studies indicate that onset of drinking in adolescents is approximately 12.5 to 15 years of age (Anderson and Baumberg, 2006; De Wit et al., 2000). Furthermore, if an adolescent begins drinking alcohol before the age of 15, he or she is up to four times more likely to develop an alcohol dependency than individuals who do not consume alcohol until they are 20 years of age (Grant and Dawson, 1997).

It is also recommended that researchers allocate greater attention to studying gender differences in attitudes towards non-drinkers. A modest point-biserial correlation was observed between gender, and scores on the RANDS suggesting that males evidenced more negative attitudes towards non-drinkers. This finding appears to be congruent with research suggesting that the act of ‘non-drinking’ and, perhaps, by extension, the social category entitled ‘non-drinkers’ are viewed as not fully meeting the requirements of the conventional masculine ideal (De Visser et al., 2009). Analogous to social norms governing eating habits and identity among women (Woolhouse et al., 2012), competence in drinking (e.g. an ability/willingness to drink) may be one of the social domains that are a prerequisite for attainment of this masculine identity (De Visser and Smith, 2006; De Visser et al., 2009).

**Limitations and future research directions**

As with all the studies, this research possesses certain limitations. First, self-reports are prone to bias of recall, reportage and other self-presentation characteristics (Hasin and Carpenter, 1998) and self-reports of drinking behaviour can be particularly problematic (Koning et al., 2010). Second, multicollinearity was a point of concern among the subscales measuring social and enhancement drinking motives. This unanticipated finding suggests that the four-factor model may not be optimal within an Irish context and underscores the need to ensure that measures are culturally sensitive (Moghaddam, 1987). Third, the issue of generalisability must be noted. The schools used within this study were from a selection of 48 public secondary schools (12 in each of the four provinces of the Republic of Ireland). Four schools participated; however, all represented rural areas, albeit from relatively large provincial towns (>3,000). Future research on the RANDS would benefit by assessing attitudes towards non-drinkers in urban areas. Fourth, previously published research on the RANDS has offered evidence for its association with peer pressure variables. Since the RANDS relates to peer evaluations, it would be useful to further examine peer pressure constructs (such as a more in-depth focus on the socialisation process, which is the tendency of peer group members to grow more similar as a result of peer modelling and perceived pressures to conform (Kiuru et al., 2010)). Fifth, and finally, as with many alcohol studies, the results outlined herein are correlational in nature. Thus, one cannot
conclude that attitudes towards non-drinkers initiate or maintain alcohol consumption. For example, Self-Perception Theory (Bem, 1967), which asserts that individuals formulate attitudes based on their behaviour, may be applicable in that drinkers might infer that they hold negative attitudes towards non-drinkers because they drink.

As stated in the ‘Introduction’ section, SIT may explain the relationship between alcohol consumption and negative attitudes towards non-drinkers. Adolescent drinking is thought to be atypical (i.e. they have yet to develop an average or typical way of drinking; Brown et al., 2008). Therefore, adolescents may begin to drink without having definitive attitudes on alcohol-related subjects, including attitudes towards non-drinkers. However, as they progress in their drinking behaviour, they may be motivated to perceive those who do not engage in this behaviour as fundamentally dissimilar. Beginning to self-identify as drinkers, their attitudes towards the axiomatic out-group (i.e. the non-drinker) may transmogrify, moving, perhaps, from a point of neutrality to negativity. While scores on the RANDS do not suggest that, in general, adolescents possess negative attitudes towards non-drinkers, for those consuming alcohol in greater quantity and in a riskier manner, attitudes towards this social group tended to be less favourable.

The relationship between attitudes towards non-drinkers, as measured by the RANDS, and drinker prototypes also warrants scrutiny. For example, research on prototypic representations of abstainers versus moderate drinkers suggests that the valence of the prototype may predict subsequent intention to drink. Congruent with the rationale underlying the development of the RANDS, Spijkerman et al. (2010) found that both self-reported alcohol use and observed alcohol use were greater among university student participants indicating more negative perceptions of the ‘typical abstainer’ prototype. An important empirical question concerns whether manipulating the valence of the abstainer prototype has implications for attitudes towards non-drinkers or vice versa, or on rates of alcohol consumption (Zimmermann and Sieverding, 2011). Also of note is whether prototype valence and attitudes towards non-drinkers independently account for variance in alcohol consumption and, if so, whether the proportions of variance accounted for are of similar or discrepant magnitudes.

Conclusion

The current research was undertaken to examine whether the RANDS holds value when distributed to adolescents. Findings indicate that, consistent with previous studies using older respondents, the RANDS possesses good scale-score reliability and validity. Of particular note is the finding that attitudes towards non-drinkers accounted for unique variance in problem drinking that was comparable in magnitude to variables such as drinking motives and sensation seeking, variables that receive far greater attention in substance use literature. On the basis of our findings, we recommend that additional research be conducted to delineate the role that attitudes towards non-drinkers play in alcohol consumption among children and young adults.

Funding

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Notes

1. A total of 639 survey packs were distributed to participating schools. Due to an overestimation of student numbers in each school, approximately 100 survey packs were returned to the researcher. Thus, assuming that 539 surveys were distributed, the estimated response rate is 79.8 per cent (430/539).
2. As per Stöber’s recommendation, item 4 (‘I have tried illegal drugs (for example, marijuana, cocaine, etc.’) was excluded from the SDS-17.
3. A series of independent samples t-tests did not identify significant differences on any of the drinking indices or the variables of interest (e.g. RANDS, motives to drink) between students for whom the
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consent form was posted directly to parents/guardians and those who were asked to submit the consent form to their parents/guardians.

4. Parents/guardians not wishing to allow their child participate were instructed to return an attached form to the school indicating this decision. No parents refused consent for their child.

5. It was hoped that this step would maximise respondents’ awareness that no one other than the researchers would examine the questionnaire and, in so doing, minimise response bias.

6. DMQ-R subscales scores were computed for drinkers only, as the wording of items is problematic for non-drinkers (i.e. ‘How often do you drink because …?’). A drinker and non-drinker could both ostensibly choose the response ‘Never’ to any/all of the items; the drinker may be indicating that he/she does not drink for that specific motive, whereas the non-drinker might be simply indicating that he/she never drinks.

7. When the regressions were recalculated using the ‘Social’ instead of ‘Enhancement’ motive, results did not change appreciably.

8. The word ‘predictor’ is used as per the lexicon of regression analysis and does not infer a causal relationship.

9. The four provinces are Leinster, Munster, Ulster and Connaught. Ulster is part of the island of Ireland, but six of its nine counties are under the auspices of the United Kingdom.

10. Prototypes were developed using 16 positive/negative descriptors terms, such as ‘boring’ and ‘cool’, scored from 1 to 7, and summed. Higher scores indicated a more favourable prototype.

References


ated frequency’ approach become the norm in survey research?. *Addiction* 101: 16–30.


